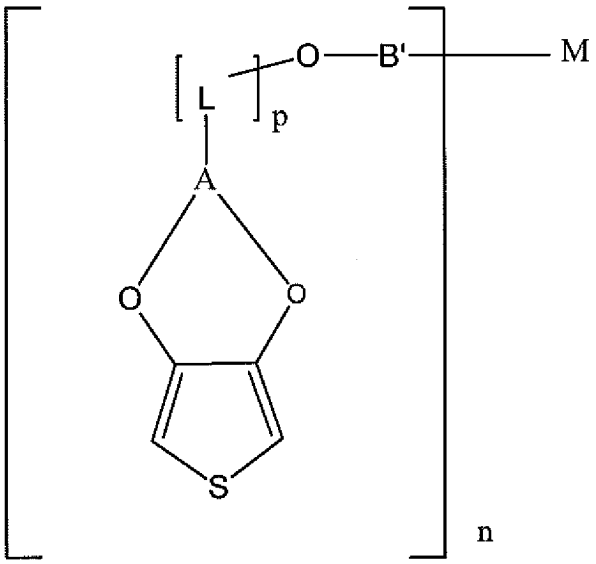
AMENDMENTS TO THE CLAIMS

Claims 1-45 (Canceled).

46. (Currently Amended) A ~~3,4-Alkylenedioxythiophenes~~ 3,4-Alkylenedioxythiophene of the formula (I),



(I)

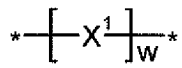
wherein

A is a C_1 or C_3-C_5-alkylene radical which is substituted at any point by a linker L and optionally bears further substituents,

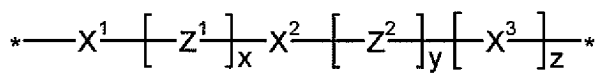
L is a methylene group,

p is 0 or an integer from 1 to 6,

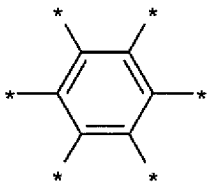
M is an n-functional group of the formula (II-a), (II-b) or (II-c-1) to (II-c-6),



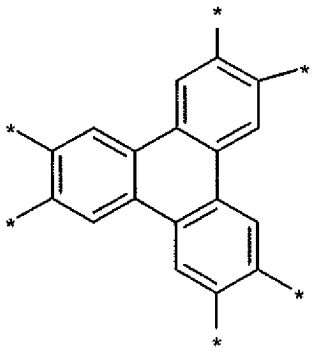
(II-a)



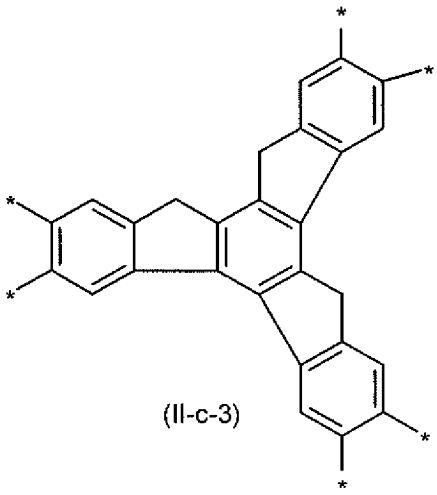
(II-b)



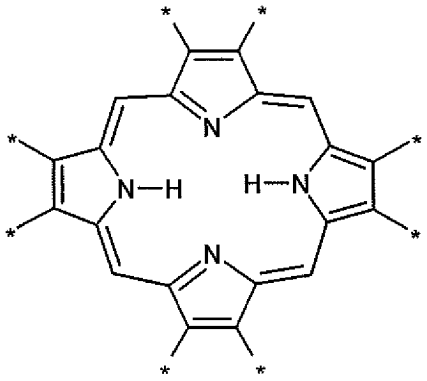
(II-c-1)



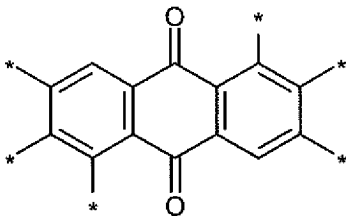
(II-c-2)



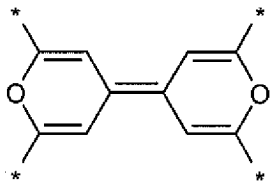
(II-c-3)



(II-c-4)



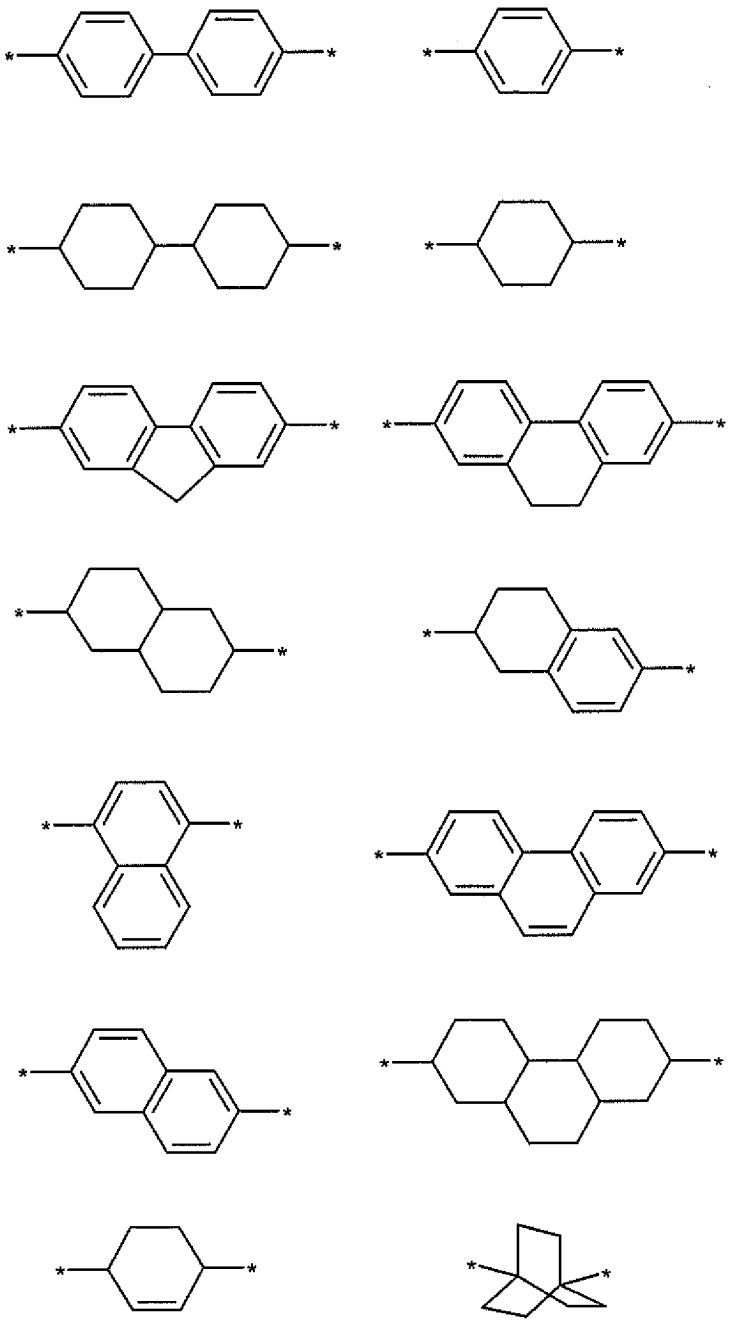
(II-c-5)

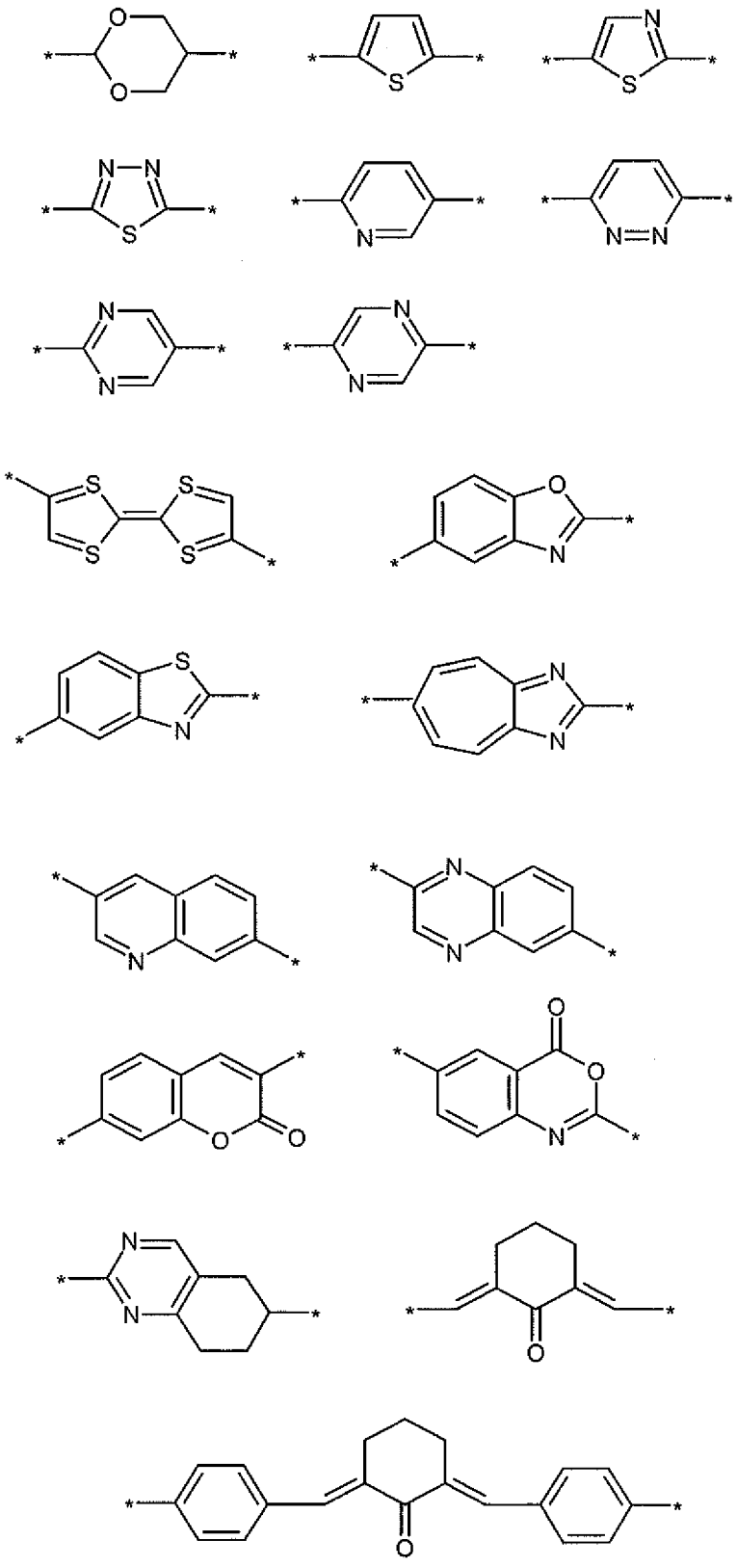


(II-c-6)

wherein

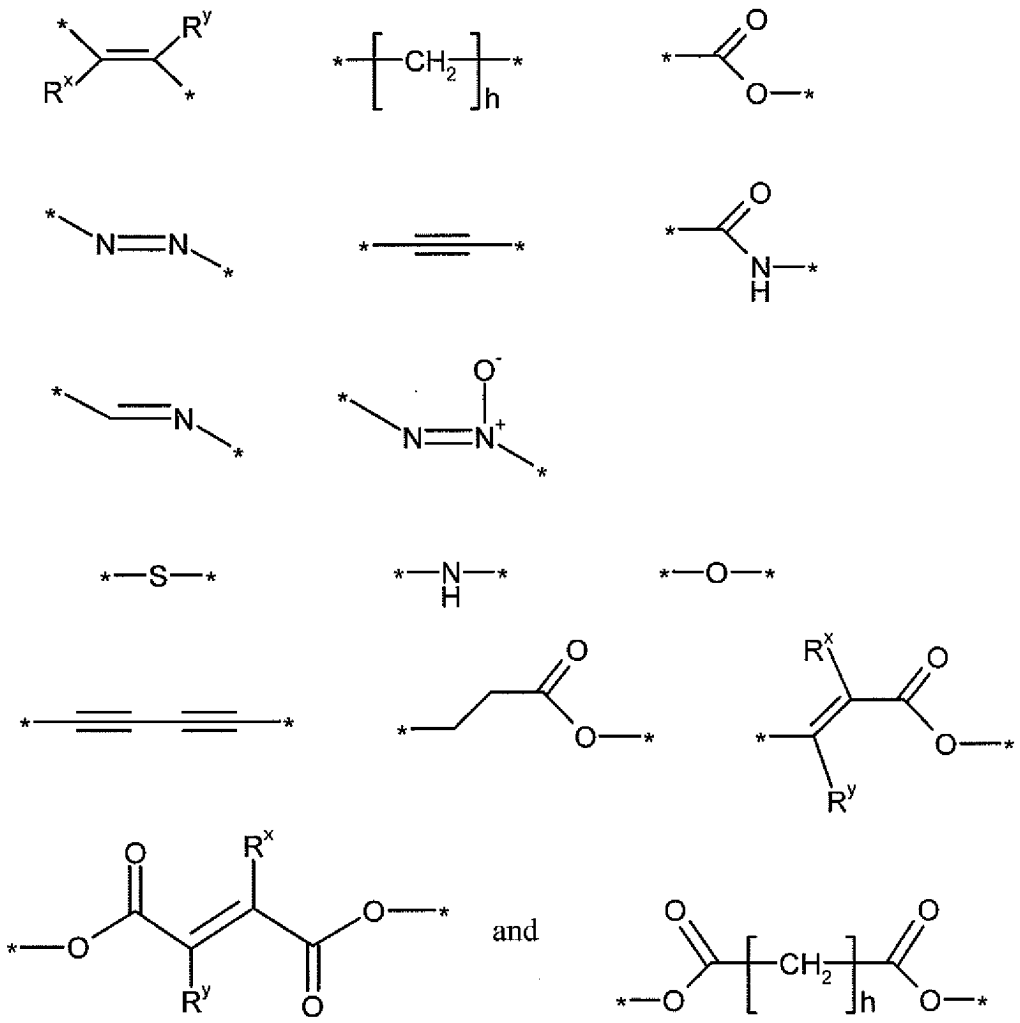
X^1, X^2 and X^3 are substituted or unsubstituted structures selected independently from the group consisting of





and

Z^1 and Z^2 are structures selected independently from the group consisting of



and

wherein

R^x and R^y are each, independently of one another, H, substituted or unsubstituted C_1-C_{22}-alkyl, C_1-C_{22}-haloalkyl, C_1-C_{22}-alkenyl, C_1-C_{22}-alkoxy, C_1-C_{22}-thioalkyl, C_1-C_{22}-iminoalkyl, C_1-C_{22}-alkoxycarbonyl, C_1-C_{22}-alkoxycarbonyloxy, a radical of an aliphatic C_1-C_{22}-alkanecarboxylic acid or of acrylic acid, halogen, pseudohalogen, NO_2, a carboxyl group or a hydroxy group,

h is an integer from 1 to 10,

w is an integer from 1 to 5,

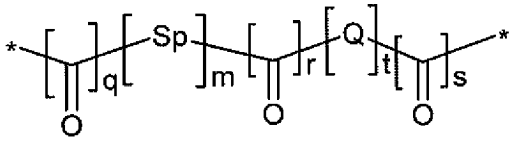
x, y and z are each, independently of one another, 0 or 1, and

n an integer from 1 to 8, where when n is 1, the group of the formula (II-a) or (II-b) bears a terminal group F' at the linkage points denoted by *,

wherein

F' is H, substituted or unsubstituted C_1-C_{22}-alkyl, C_1-C_{22}-haloalkyl, C_1-C_{22}-alkenyl, C_1-C_{22}-alkoxy, C_1-C_{22}-thioalkyl, C_1-C_{22}-iminoalkyl, C_1-C_{22}-alkoxycarbonyl, C_1-C_{22}-alkoxycarbonyloxy, a radical of an aliphatic C_1-C_{22}-alkanecarboxylic acid or of acrylic acid, halogen, pseudohalogen, a nitro (NO_2) group, a carboxyl group, a sulphonic acid group or sulphonate group or a hydroxy group,

B' is a bridging group of the formula (B)



(B)

wherein

q is 0 or 1,

r and s are identical or different and each are 0 or 1, with the proviso that when r is 1, s is 0 and vice versa or both are optionally 0,

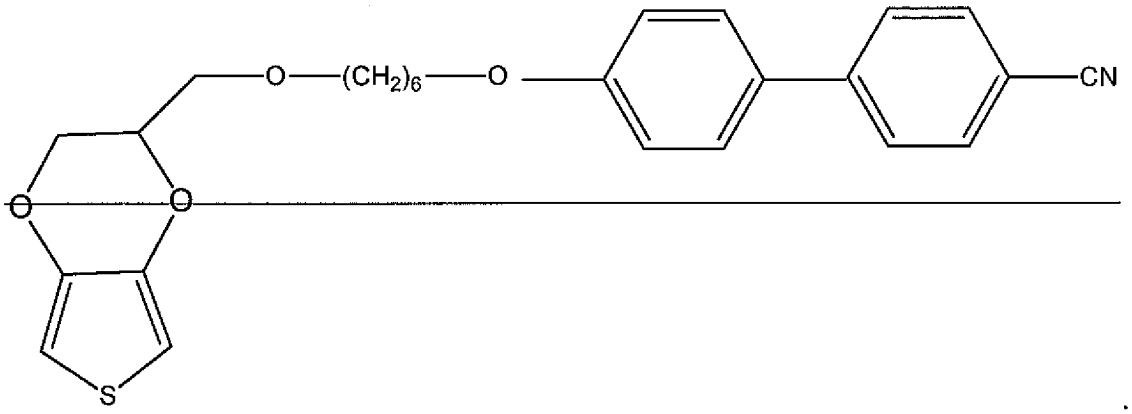
t is 0 or 1,

Sp is a spacer selected from the group consisting of substituted and unsubstituted linear or cyclic C_1-C_{20}-alkylene groups, C_5-C_{20}-arylene groups, C_2-C_{20}-heteroarylene groups in which from one to three heteroatoms selected from the group consisting of N, O and S can additionally be present in the heteroaromatic ring or ring system, C_6-C_{20}-aralkylene groups, C_2-C_{200}-oligoether and –polyether groups,

m is 0 or 1, and

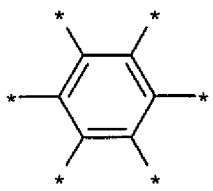
Q is O, S or NH

~~with the proviso that said polythiophenes is not~~

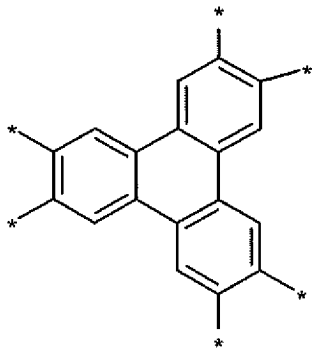


47. (Currently Amended) The ~~3,4-Alkylenedioxythiophenes~~ 3,4-Alkylenedioxythiophene of claim 46, wherein

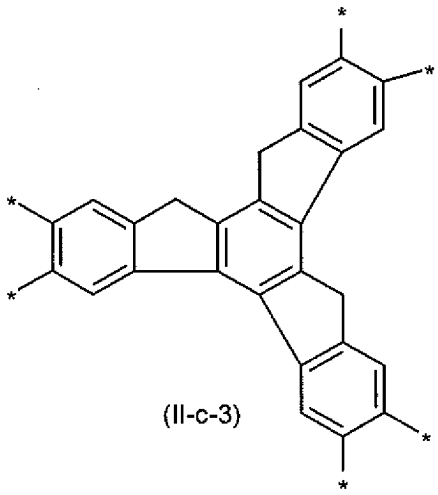
M is an n-functional group selected from the group consisting of the formulae (II-c-1) to (II-c-6),



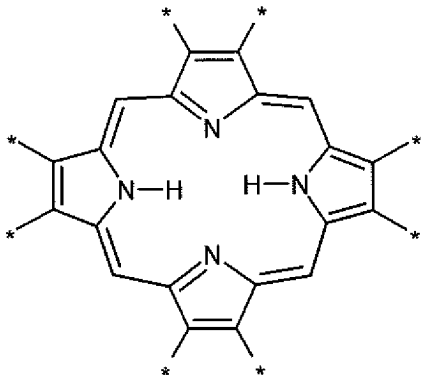
(II-c-1)



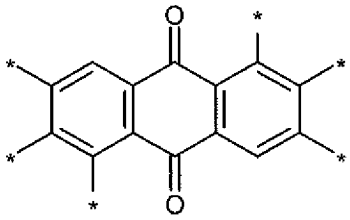
(II-c-2)



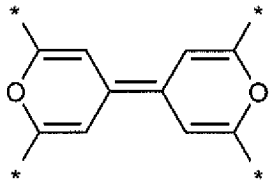
(II-c-3)



(II-c-4)



(II-c-5)



(II-c-6)

wherein

n is at most 4, 6 or 8,

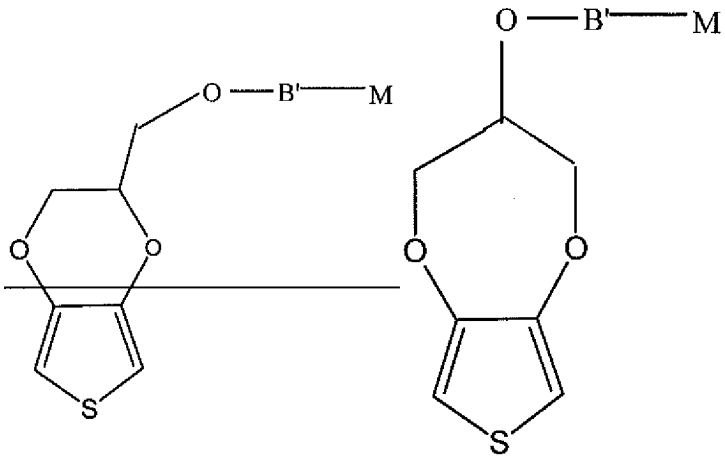
and wherein when n is an integer below 4, 6 or 8, M is selected from the group consisting of the formulae (II-c-1) to (II-c-6) bearing a terminal group F' on the remaining 4 – n, 6 – n or 8 – n linkage points denoted by *,

wherein

F' is H, substituted or unsubstituted C_1-C_{22}-alkyl, C_1-C_{22}-haloalkyl, C_1-C_{22}-alkenyl, C_1-C_{22}-alkoxy, C_1-C_{22}-thioalkyl, C_1-C_{22}-iminoalkyl, C_1-C_{22}-alkoxycarbonyl, C_1-C_{22}-alkoxycarbonyloxy, a radical of an aliphatic C_1-C_{22}-alkanecarboxylic acid or

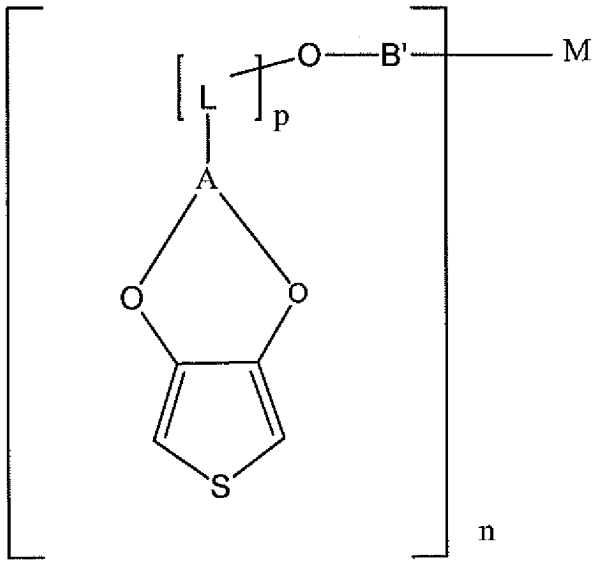
of acrylic acid, halogen, pseudohalogen, a nitro (NO_2) group, a carboxyl group, a sulphonic acid group or sulphonate group or a hydroxy group.

48. (Currently Amended) The 3,4-Alkylenedioxythiophene of claim 46, having the structure of the ~~formulae (I-a) or~~ formula (I-b),



(I-a) (I-b)

49. (Previously presented) A 3,4-Alkylenedioxythiophene of the formula (I),



(I)

wherein

A is a C_1-C_5-alkylene radical which is substituted at any point by a linker L and optionally bears further substituents,

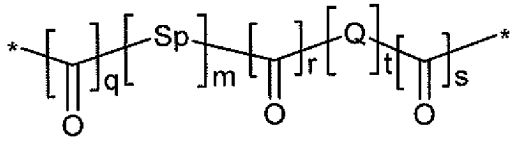
L is a methylene group,

p is 0 or an integer from 1 to 6,

M is an n-functional steroid radical or a derivative of a steroid radical,

n is 1 and

B' is a bridging group of the formula (B)



(B)

wherein

q is 0 or 1,

r and s are each independently 0 or 1, with the proviso that when r is 1, s is 0 and vice versa or both are optionally 0,

t is 0 or 1,

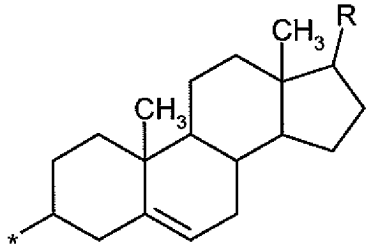
Sp is a spacer selected from the group consisting of substituted and unsubstituted linear or cyclic C_1-C_{20}-alkylene groups, C_5-C_{20}-arylene groups, C_2-C_{20}-heteroarylene groups in which from one to three heteroatoms selected from the group consisting of N, O and S can additionally be present in the heteroaromatic ring or ring system, C_6-C_{20}-aralkylene groups, C_2-C_{200}-oligoether and –polyether groups,

m is 0 or 1,

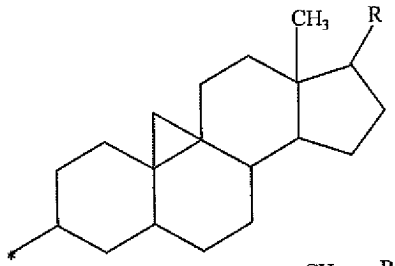
Q is O, S or NH.

50. (Previously presented) The 3,4-Alkylenedioxythiophene as claimed in claim 49, wherein

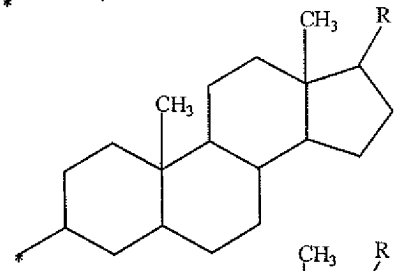
M is an n-functional cholesteryl radical or a derivative of the cholesteryl radical of the formula (III-a)-(III-e),



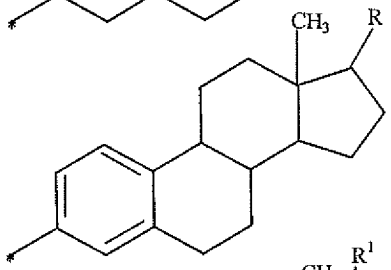
(III-a)



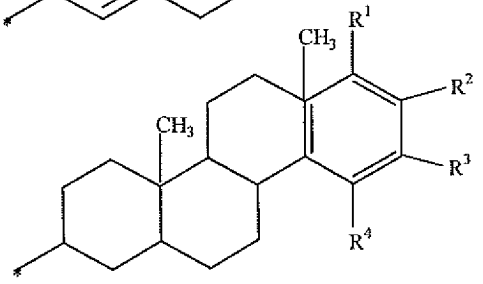
(III-b)



(III-c)



(III-d)



(III-e)

wherein R is H, substituted or unsubstituted C_1-C_{22}-alkyl, C_1-C_{22}-haloalkyl, C_1-C_{22}-alkenyl, C_1-C_{22}-alkoxy, C_1-C_{22}-thioalkyl, C_1-C_{22}-iminoalkyl, C_1-C_{22}-alkoxycarbonyl, C_1-C_{22}-alkoxycarbonyloxy, a radical of an aliphatic C_1-C_{22}-alkanecarboxylic acid or of acrylic acid, halogen, pseudohalogen, a nitro (NO_2) group, a carboxyl group, a sulphonic acid group or sulphonate group or a hydroxy group, and

R^1, R^2, R^3 and R^4 can, independently of one another, be as defined above for R.

51. (Previously presented) A process for preparing a polythiophene comprising polymerizing the 3,4-alkylenedioxythiophene as claimed in claim 46.

52. (Currently Amended) ~~The process of Claim 51 wherein a mixture of~~ A process for preparing a polythiophene comprising mixing two or more of the 3,4-Alkylenedioxythiophene as claimed in claim 46 to form a mixture ~~two or more compounds of Formula I are~~ and polymerizing the mixture ~~polymerized~~.

53. (Currently Amended) A process for preparing electrical or electronic components, light-emitting components, for antistatic coating, in optoelectronics or in solar energy technology comprising incorporating the ~~polythiophene~~ 3,4-alkylenedioxythiophene according to claim 46.

54. (Cancelled)

55. (Currently amended) A process for preparing electrical or electronic components, light-emitting components, for antistatic coating, in optoelectronics or in solar energy technology comprising incorporating the polythiophene of ~~Claim 54~~ Claim 70.

56. (Currently Amended) A process for preparing conductive layers comprising incorporating the polythiophene according to ~~Claim 54~~ Claim 70.

57. (Currently Amended) The process according to claim 52, wherein the polymerized mixture forms a layer which further comprises heating the layer at a temperature form 80^0C to 300^0C.

58. (Previously presented) The process according to claim 56, which further comprises heating the layer at a temperature form 80^0C to 300^0C.

59. (Cancelled)

60. (Currently Amended) A process for preparing the polythiophene as claimed in ~~claim 44~~ claim 70, comprising oxidatively polymerizing electrochemically the 3,4-alkylenedioxythiophene according to claim 46 ~~electrochemically compounds of the formula (I)~~.

61. (Cancelled)

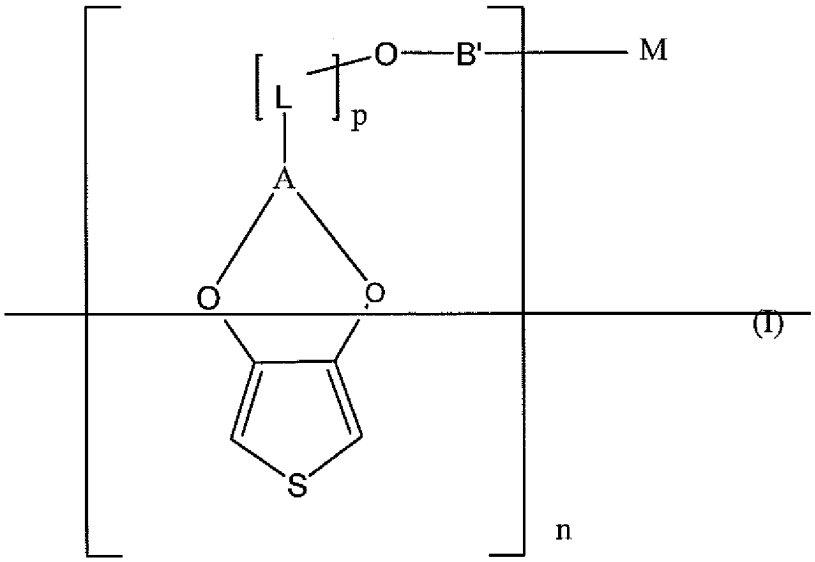
62. (Currently Amended) The polythiophene of ~~claim 59~~ Claim 70, wherein they are cationically and electrically conductive and contain bound anions as counterions to balance the positive charge.

63. (Currently Amended) The polythiophene of ~~Claim 61~~ Claim 62, wherein the counterions are polyanions of polymeric carboxylic acids or polymeric sulphonic acids.

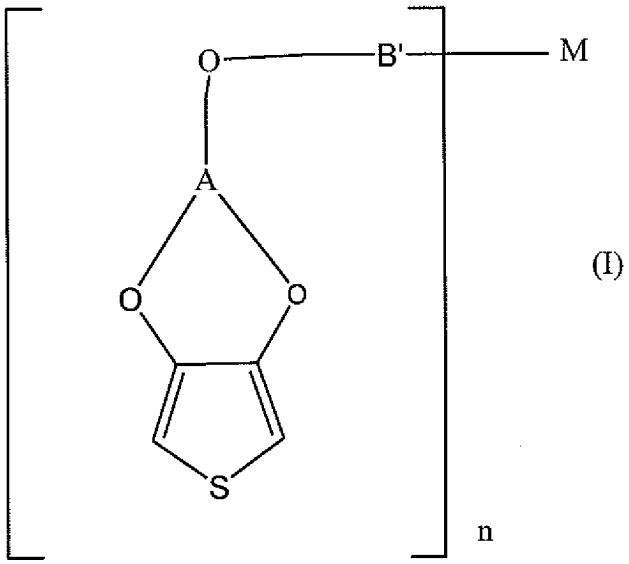
64. (Currently Amended) The polythiophene according to ~~claim 44~~ claim 70, wherein they are uncharged and semiconducting.

65. (Currently Amended) ~~Process for the preparing polythiophene~~ A process for preparing a polythiophone which comprises polymerizing the 3,4-alkylenedioxythiophene as claimed in claim 46 ~~which comprises oxidatively polymerizing electrochemically compounds of the formula (I)~~.

66. (Currently Amended) A ~~3,4-Alkylenedioxythiophenes~~ 3,4-Alkylenedioxythiophene of the formula (I),



(I)



(I)

---

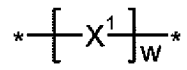
wherein

A is a C_1-C_5-alkylene radical which is substituted at any point by a linker L and optionally bears further substituents,

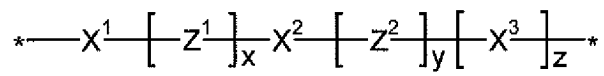
~~L is a methylene group,~~

~~p is 0,~~

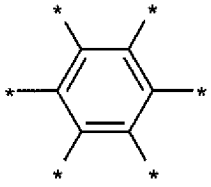
M is an n-functional group of the formula (II-a), (II-b) or (II-c-1) to (II-c-6),



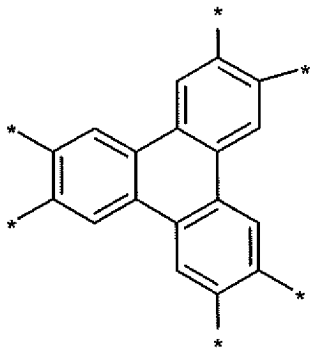
(II-a)



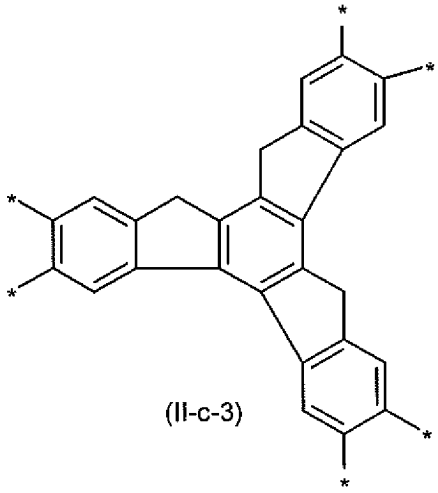
(II-b)



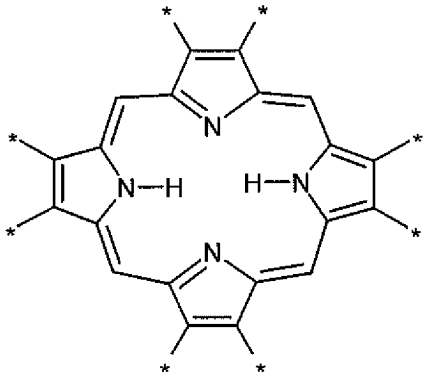
(II-c-1)



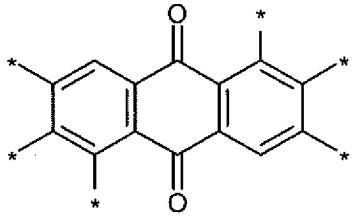
(II-c-2)



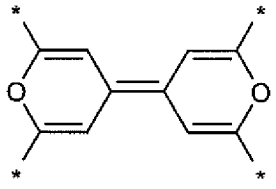
(II-c-3)



(II-c-4)



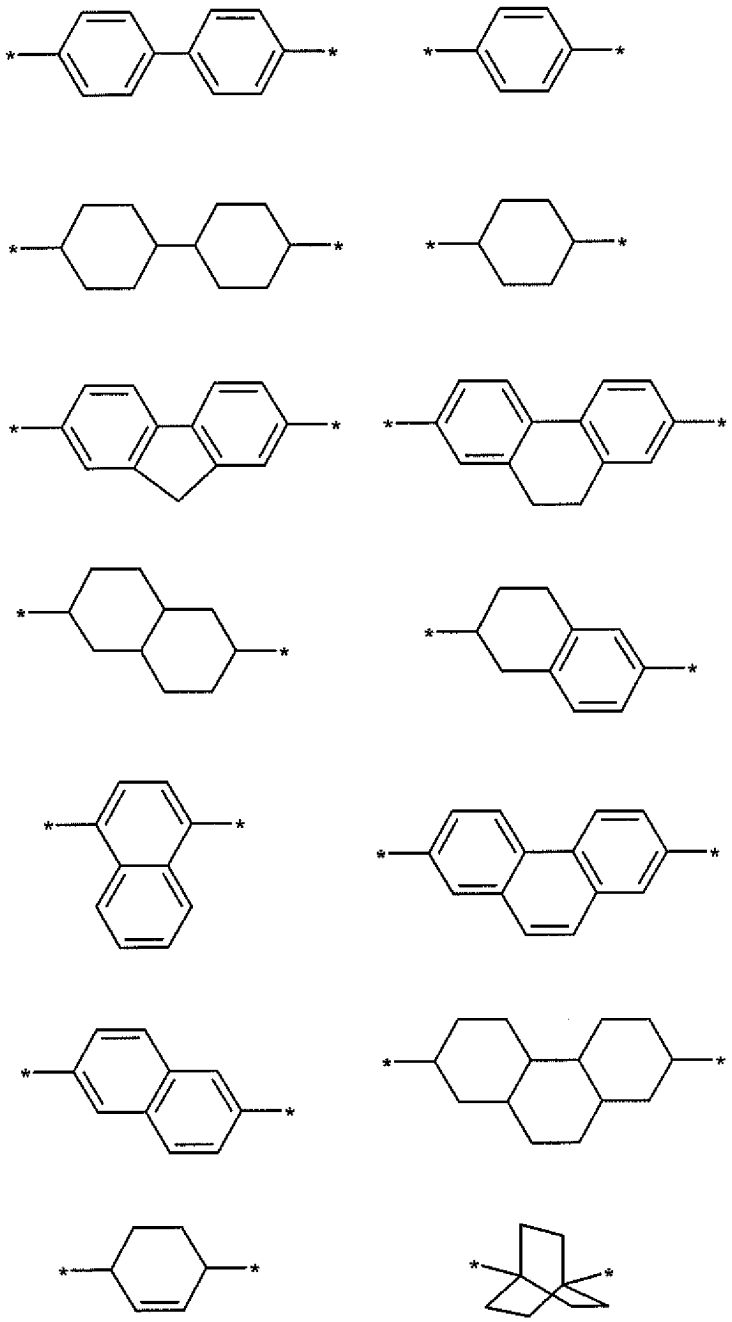
(II-c-5)

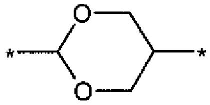
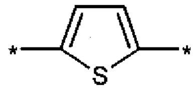
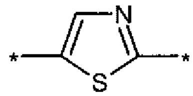


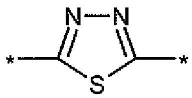
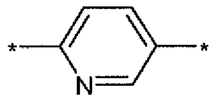
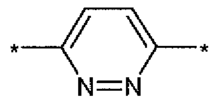
(II-c-6)

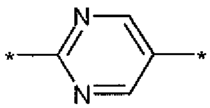
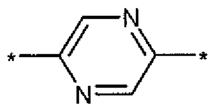
wherein

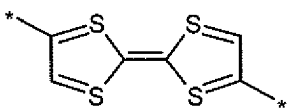
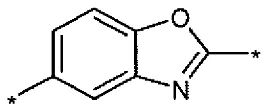
X^1, X^2 and X^3 are substituted or unsubstituted structures selected independently from the group consisting of

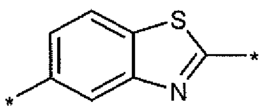
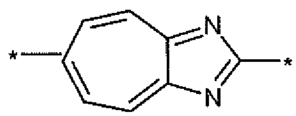


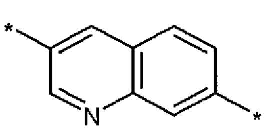
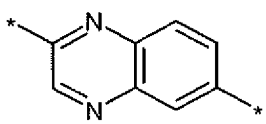
  

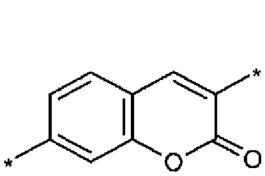
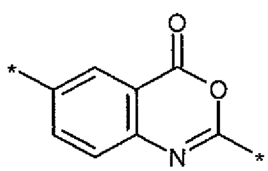
  

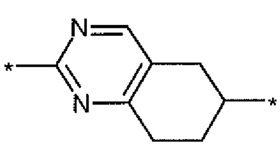
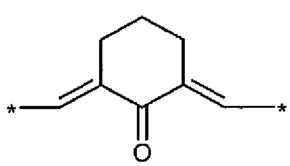
 

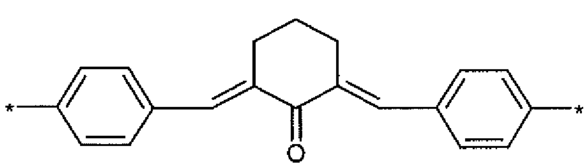
 

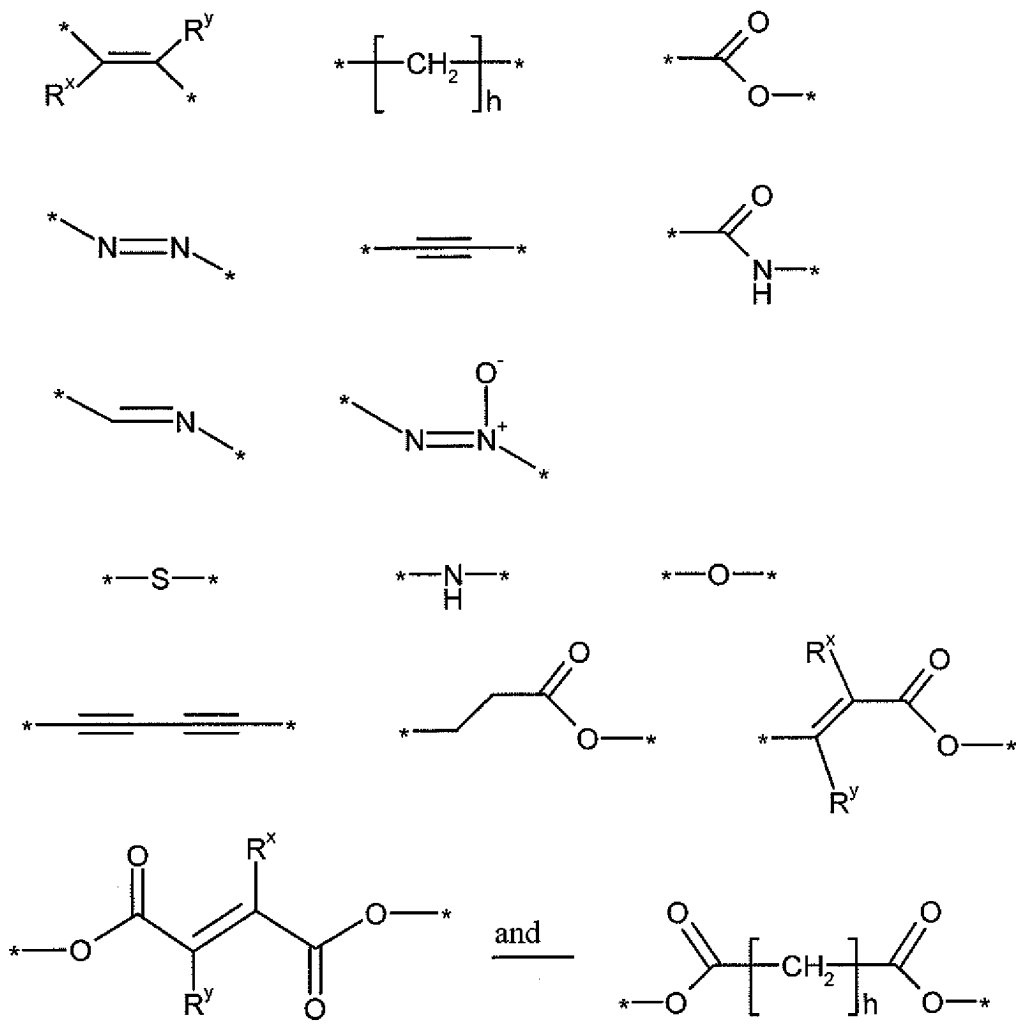
 

and 

Z^1 and Z^2 are structures selected independently from the group consisting of



wherein

R^x and R^y are each, independently of one another, H, substituted or unsubstituted C_1-C_{22}-alkyl, C_1-C_{22}-haloalkyl, C_1-C_{22}-alkenyl, C_1-C_{22}-alkoxy, C_1-C_{22}-thioalkyl, C_1-C_{22}-iminoalkyl, C_1-C_{22}-alkoxycarbonyl, C_1-C_{22}-alkoxycarbonyloxy, a radical of an aliphatic C_1-C_{22}-alkanecarboxylic acid or of acrylic acid, halogen, pseudohalogen, NO_2, a carboxyl group or a hydroxy group,

h is an integer from 1 to 10,

w is an integer from 1 to 5,

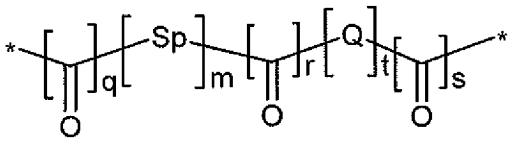
x, y and z are each, independently of one another, 0 or 1, and

n an integer from 1 to 8, where when n is 1, the group of the formula (II-a) or (II-b) bears a terminal group F' at the linkage points denoted by *,

wherein

F' is **H,** substituted or unsubstituted C_1-C_{22}-alkyl, C_1-C_{22}-haloalkyl, C_1-C_{22}-alkenyl, C_1-C_{22}-alkoxy, C_1-C_{22}-thioalkyl, C_1-C_{22}-iminoalkyl, C_1-C_{22}-alkoxycarbonyl, C_1-C_{22}-alkoxycarbonyloxy, a radical of an aliphatic C_1-C_{22}-alkanecarboxylic acid or of acrylic acid, halogen, pseudohalogen, a nitro (NO_2) group, a carboxyl group, a sulphonic acid group or sulphonate group or a hydroxy group,

B' is a bridging group of the formula (B)



(B)

wherein

q is 0 or 1,

r and s are identical or different and each are 0 or 1, with the proviso that when r is 1, s is 0 and vice versa or both are optionally 0,

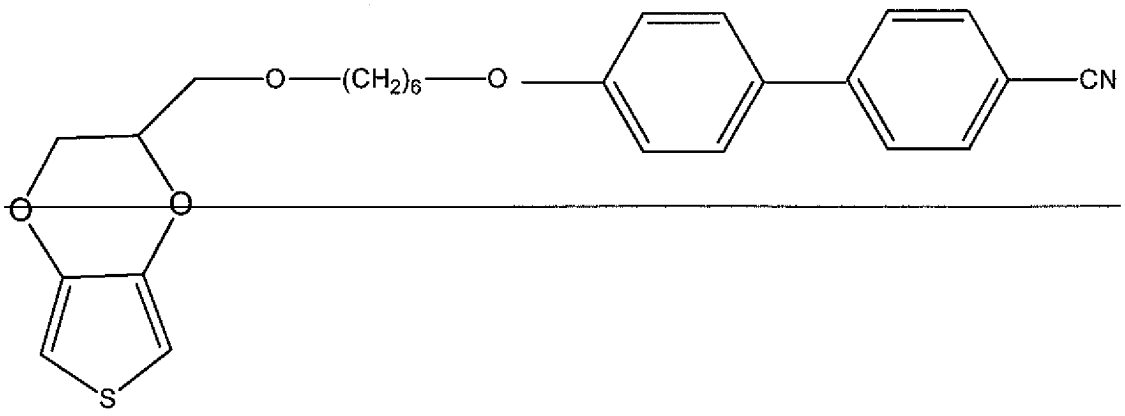
t is 0 or 1,

Sp is a spacer selected from the group consisting of substituted and unsubstituted linear or cyclic C_1-C_{20}-alkylene groups, C_5-C_{20}-arylene groups, C_2-C_{20}-heteroarylene groups in which from one to three heteroatoms selected from the group consisting of N, O and S can additionally be present in the heteroaromatic ring or ring system, C_6-C_{20}-aralkylene groups, C_2-C_{200}-oligoether and –polyether groups,

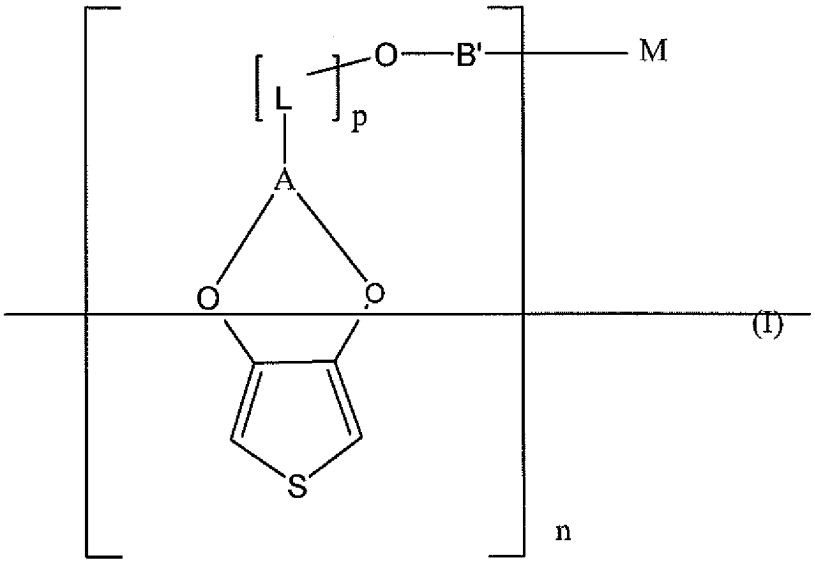
m is 0 or 1, and

Q is O, S or NH

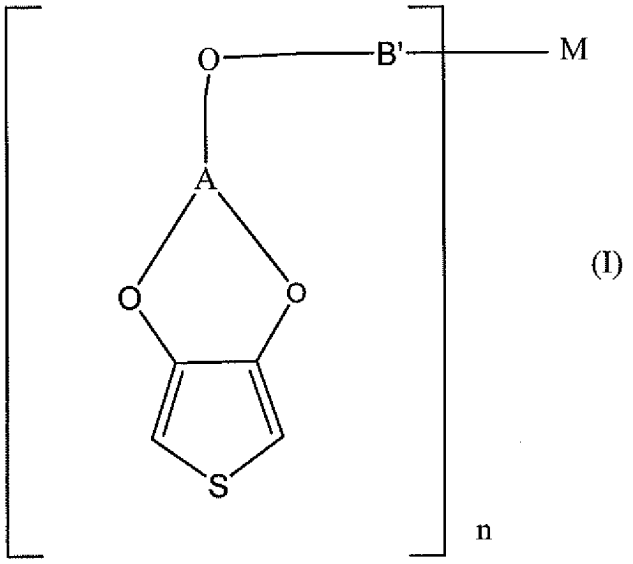
~~with the proviso that said polythiophenes is not~~



67. (Currently Amended) A ~~3,4-Alkylenedioxythiophenes~~ 3,4-Alkylenedioxythiophene of the formula (I),



(I)



(I)

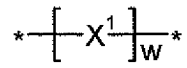
wherein

A is a C_1-C_5-alkylene radical which is substituted at any point by a linker L and optionally bears further substituents,

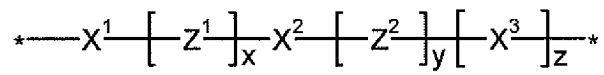
~~L is a methylene group,~~

~~p is 0 or an integer from 1 to 6,~~

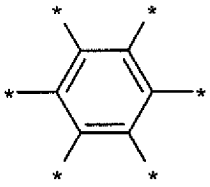
M is an n-functional group of the formula (II-a), (II-b) or (II-c-1) to (II-c-6),



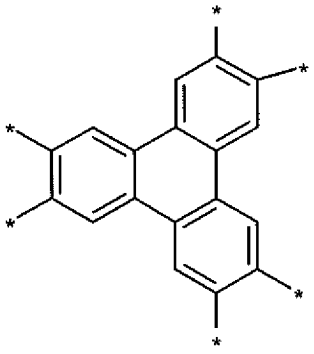
(II-a)



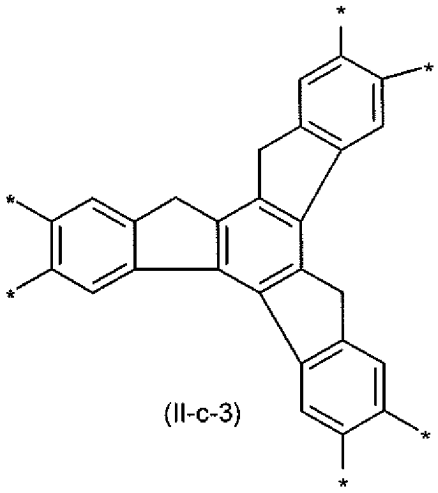
(II-b)



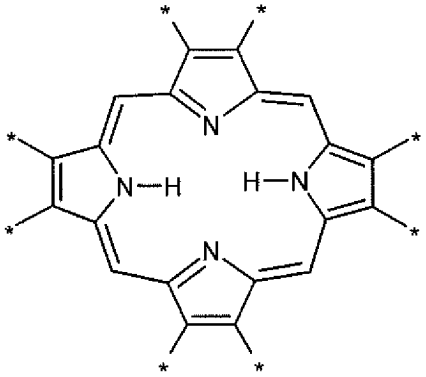
(II-c-1)



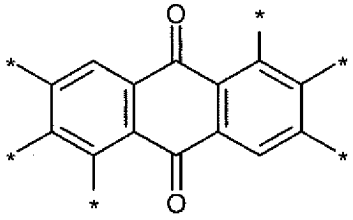
(II-c-2)



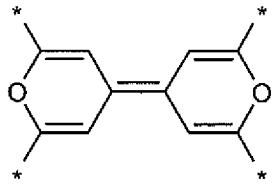
(II-c-3)



(II-c-4)



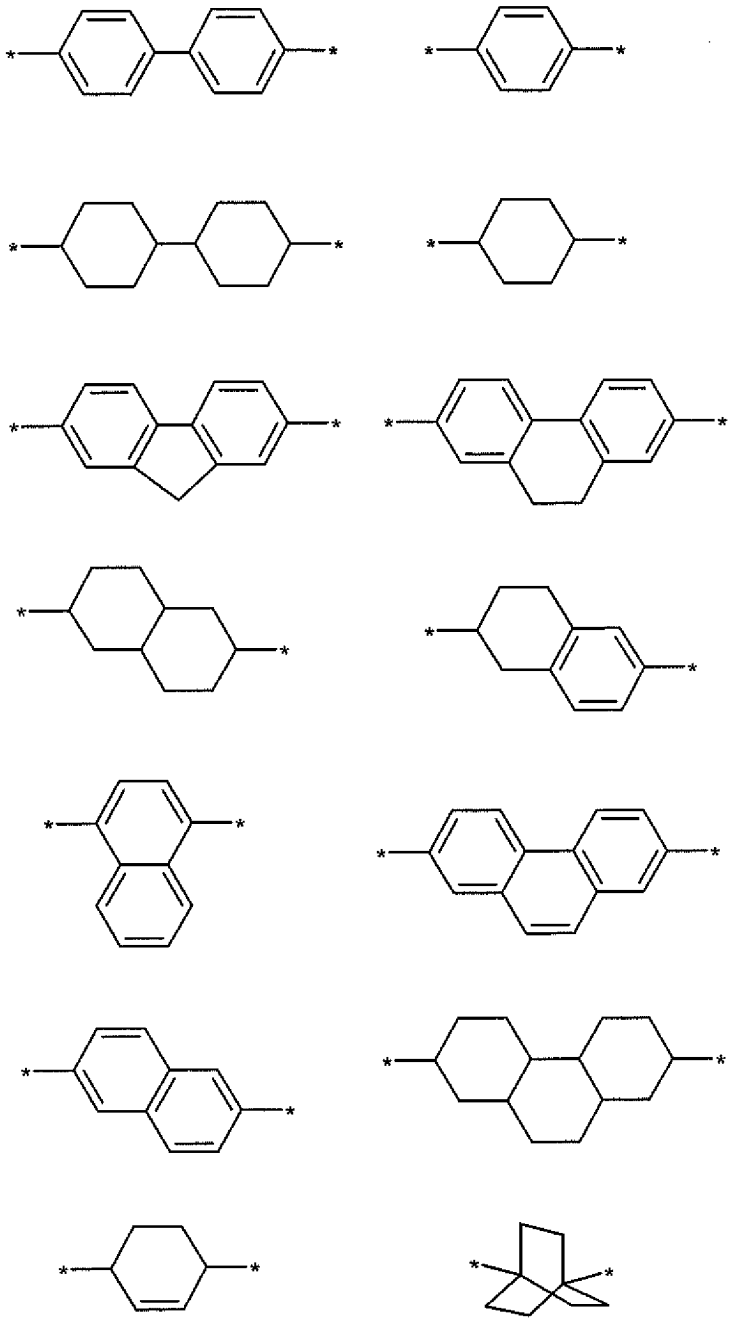
(II-c-5)

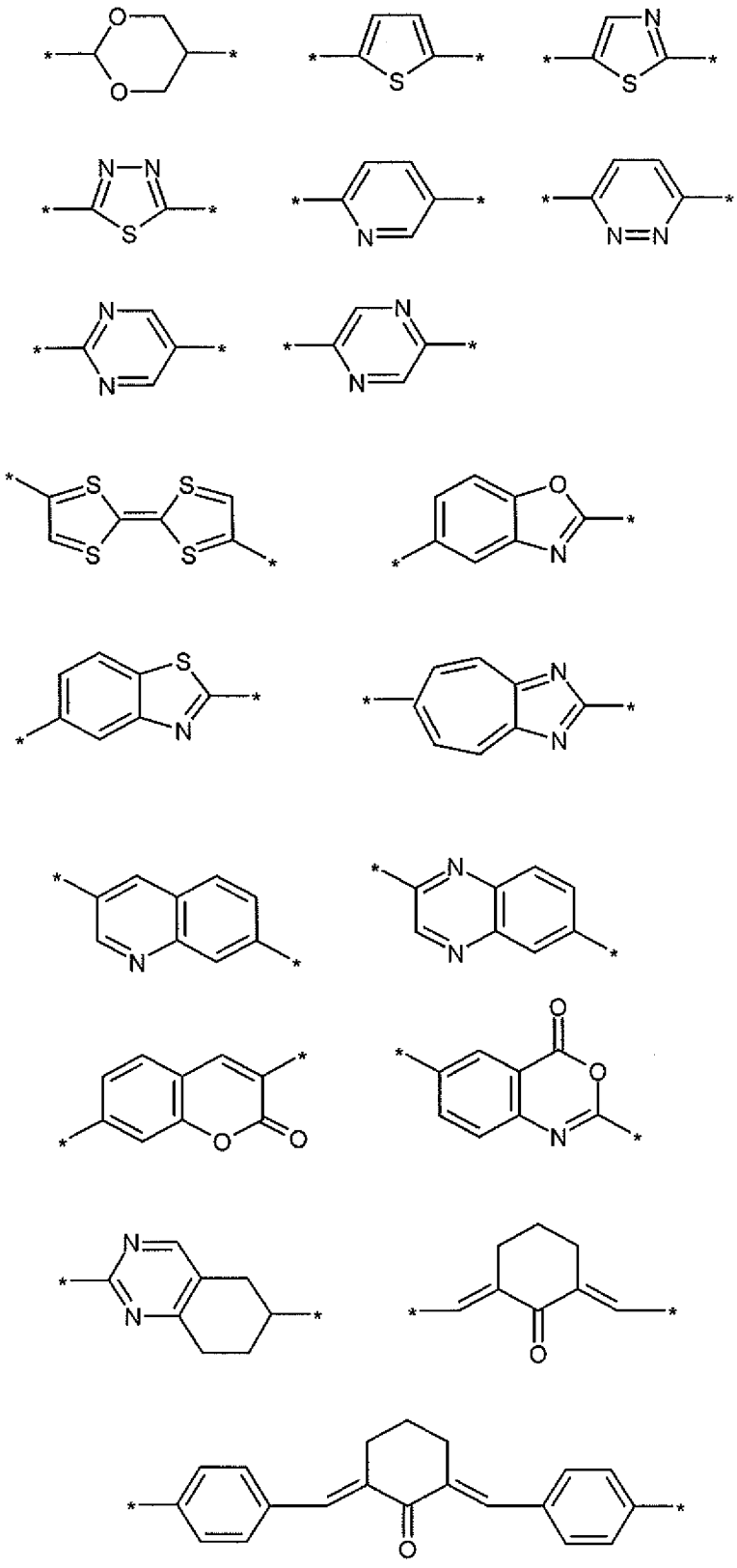


(II-c-6)

wherein

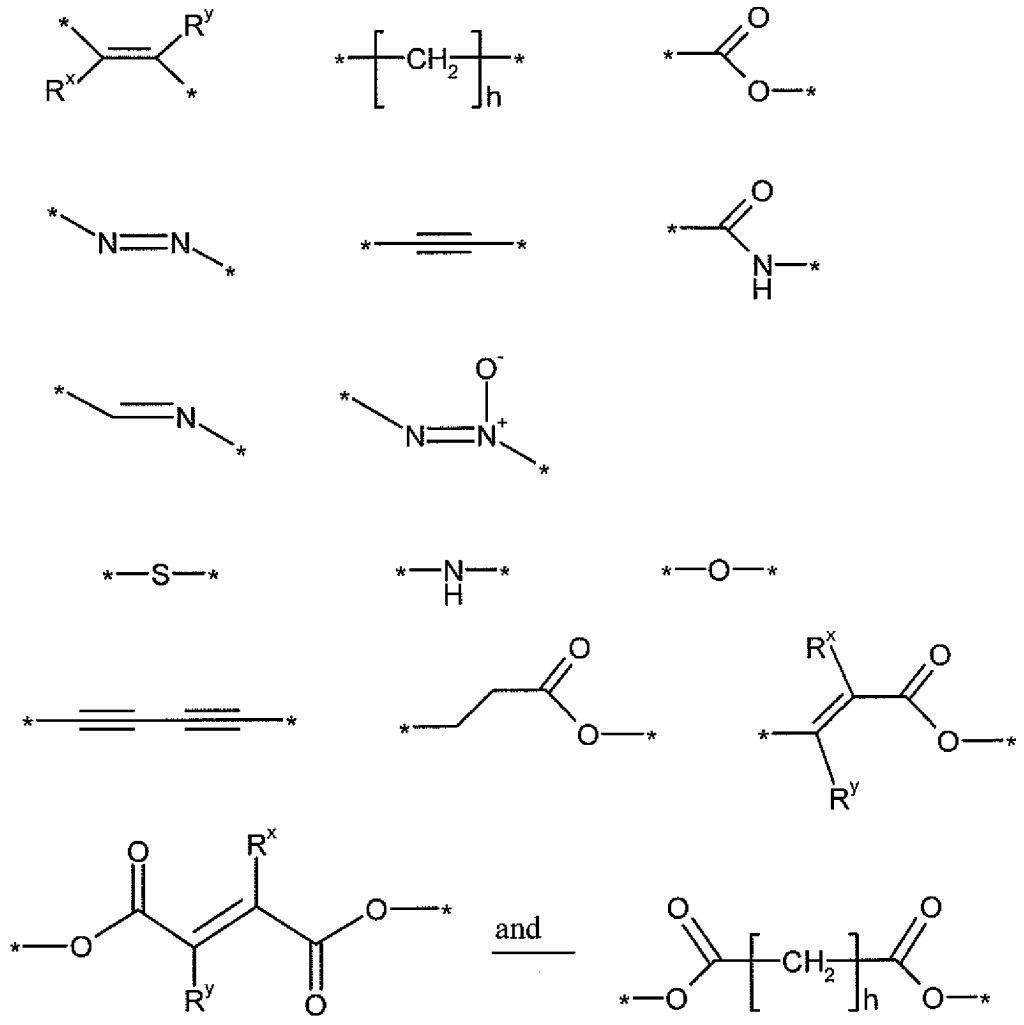
X^1, X^2 and X^3 are substituted or unsubstituted structures selected independently from the group consisting of





and

Z^1 and Z^2 are structures selected independently from the group consisting of



and

wherein

R^x and R^y are each, independently of one another, H, substituted or unsubstituted C_1-C_{22}-alkyl, C_1-C_{22}-haloalkyl, C_1-C_{22}-alkenyl, C_1-C_{22}-alkoxy, C_1-C_{22}-thioalkyl, C_1-C_{22}-iminoalkyl, C_1-C_{22}-alkoxycarbonyl, C_1-C_{22}-alkoxycarbonyloxy, a radical of an aliphatic C_1-C_{22}-alkanecarboxylic acid or of acrylic acid, halogen, pseudohalogen, NO_2, a carboxyl group or a hydroxy group,

h is an integer from 1 to 10,

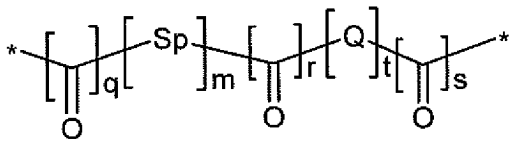
w is an integer from 1 to 5,

x, y and z	are each, independently of one another, 0 or 1, and
n	an integer from 1 to 8, where when n is 1, the group of the formula (II-a) or (II-b) bears a terminal group F' at the linkage points denoted by *,

wherein

F'	is **H,** substituted or unsubstituted C_1-C_{22}-alkyl, C_1-C_{22}-haloalkyl, C_1-C_{22}-alkenyl, C_1-C_{22}-alkoxy, C_1-C_{22}-thioalkyl, C_1-C_{22}-iminoalkyl, C_1-C_{22}-alkoxycarbonyl, C_1-C_{22}-alkoxycarbonyloxy, a radical of an aliphatic C_1-C_{22}-alkanecarboxylic acid or of acrylic acid, halogen, pseudohalogen, a nitro (NO_2) group, a carboxyl group, a sulphonic acid group or sulphonate group or a hydroxy group,

B' is a bridging group of the formula (B)

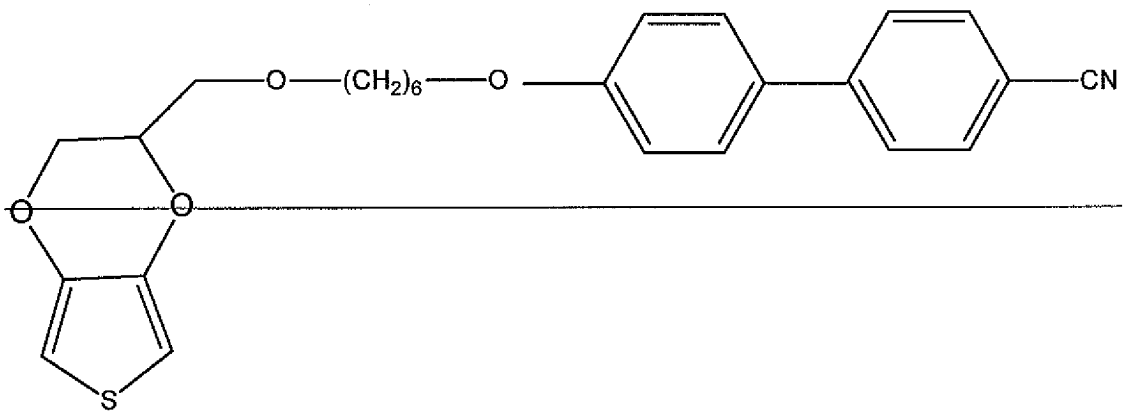


(B)

wherein

q	is 0 or 1,
r	is 1,
s	is 0,
t	is 0 or 1,
Sp	is a spacer selected from the group consisting of substituted and unsubstituted linear or cyclic C_1-C_{20}-alkylene groups, C_5-C_{20}-arylene groups, C_2-C_{20}-heteroarylene groups in which from one to three heteroatoms selected from the group consisting of N, O and S can additionally be present in the heteroaromatic ring or ring system, C_6-C_{20}-aralkylene groups, C_2-C_{200}-oligoether and –polyether groups,
m	is 0 or 1, and
Q	is O, S or NH

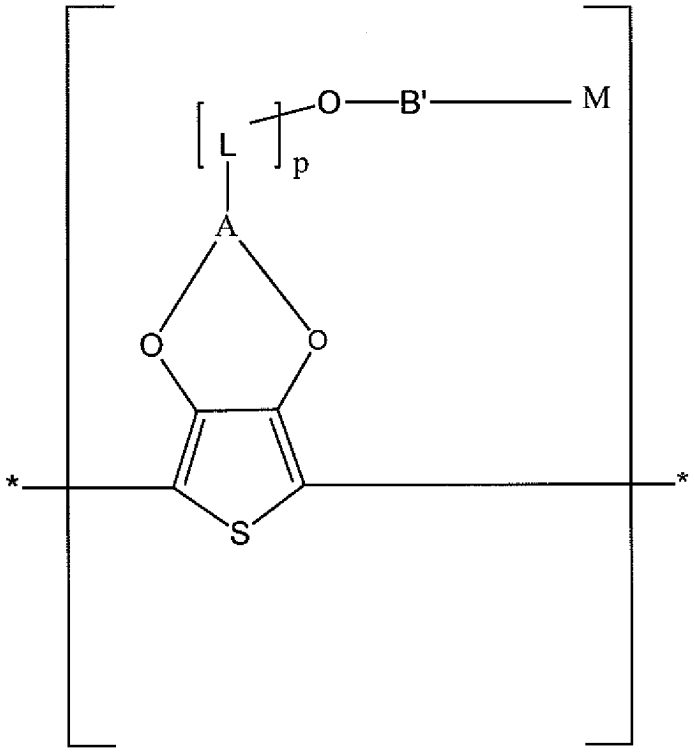
~~with the proviso that said polythiophenes is not~~



68. (Cancelled)

69. (Cancelled)

70. (New) A polythiophene which comprise recurring units of the formula (IV),



(IV)

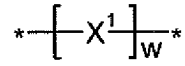
wherein

A is a C_1 or C_3-C_5-alkylene radical which is substituted at any point by a linker L and optionally bears further substituents,

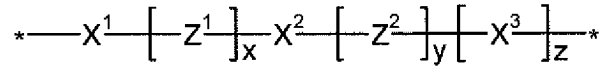
L is a methylene group,

p is 0 or an integer from 1 to 6,

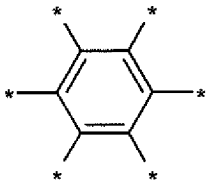
M is an n-functional group of the formula (II-a), (II-b) or (II-c-1) to (II-c-6),



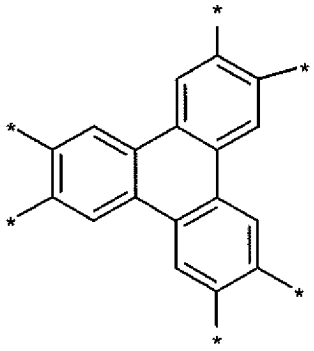
(II-a)



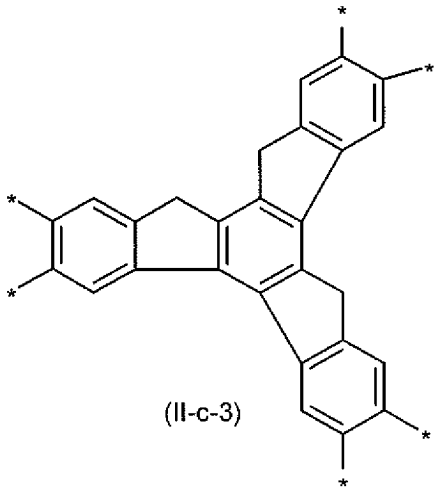
(II-b)



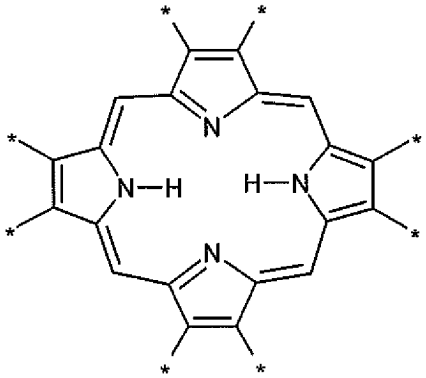
(II-c-1)



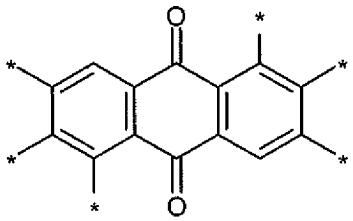
(II-c-2)



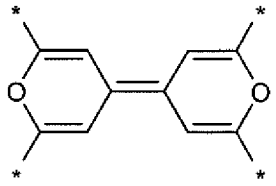
(II-c-3)



(II-c-4)



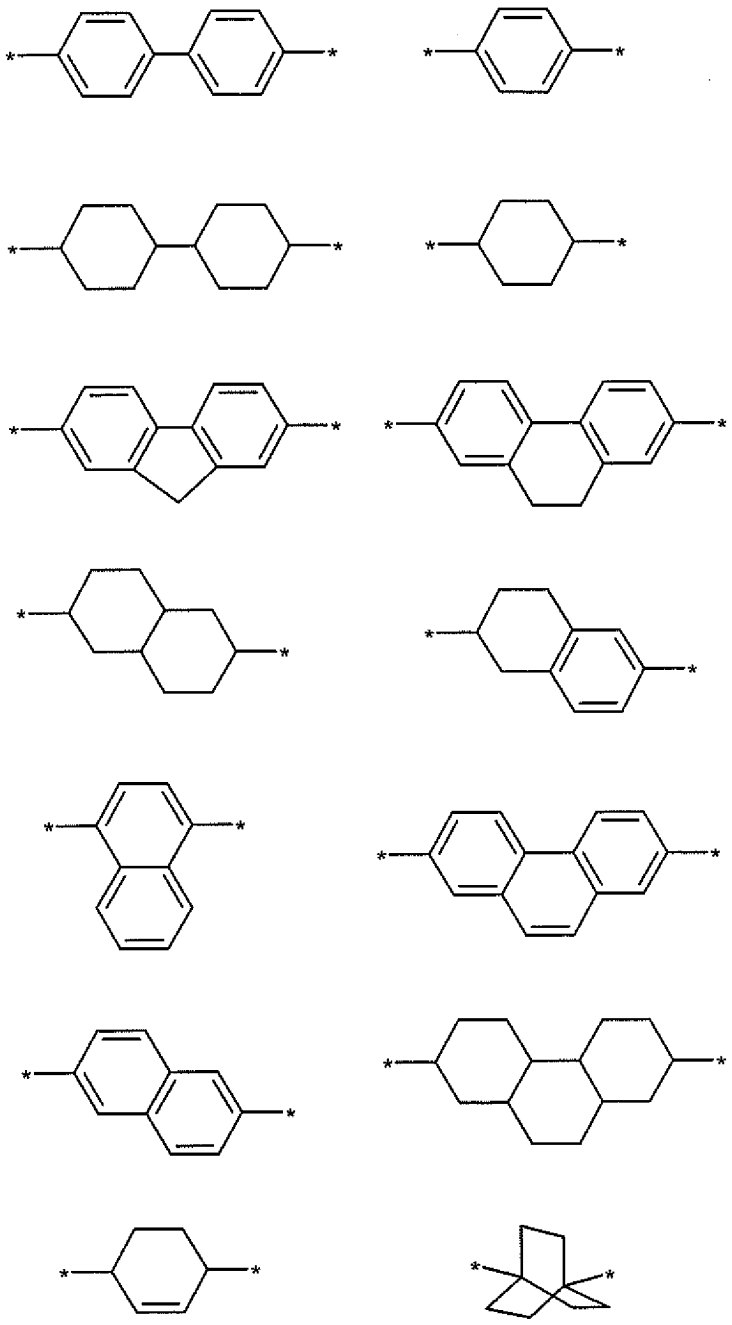
(II-c-5)

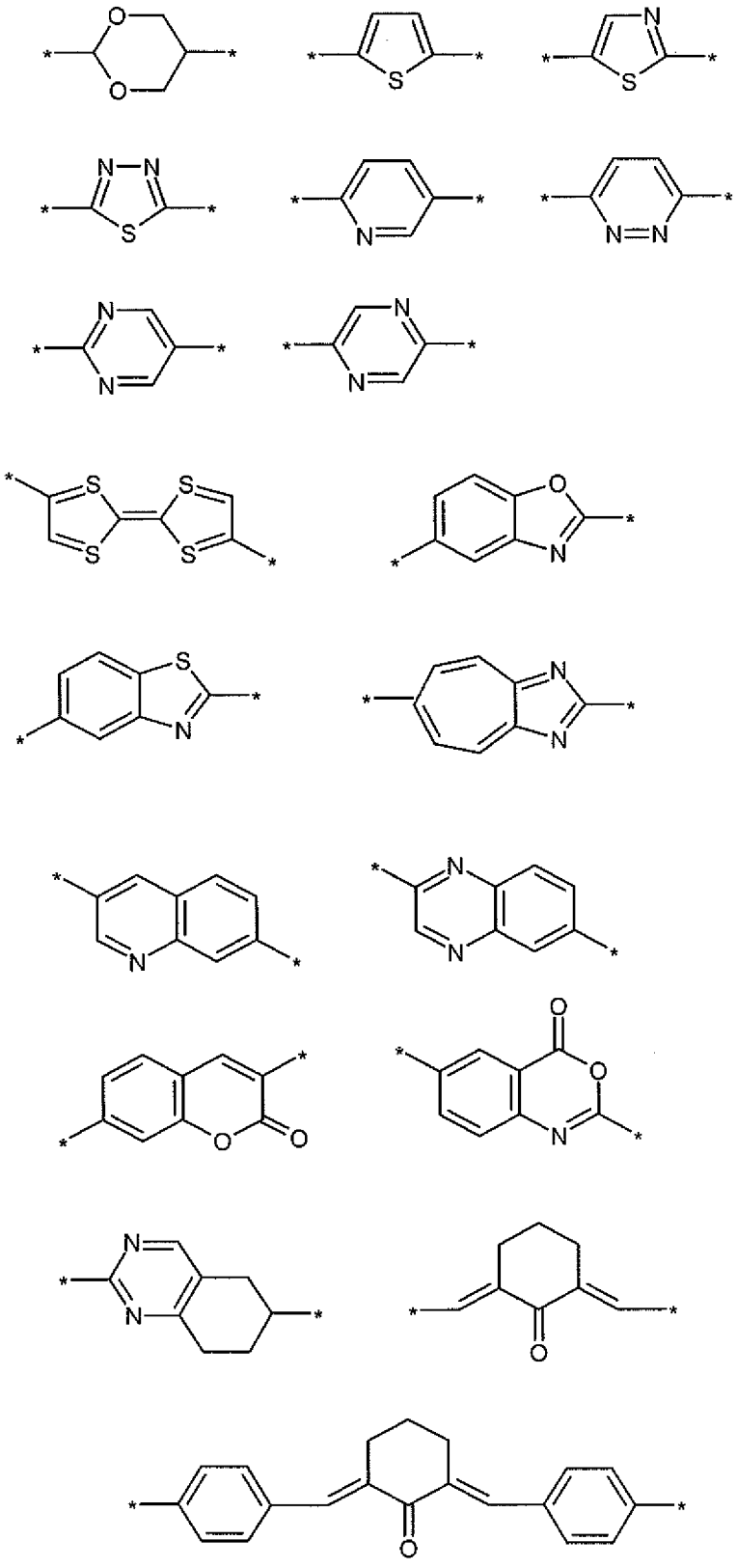


(II-c-6)

wherein

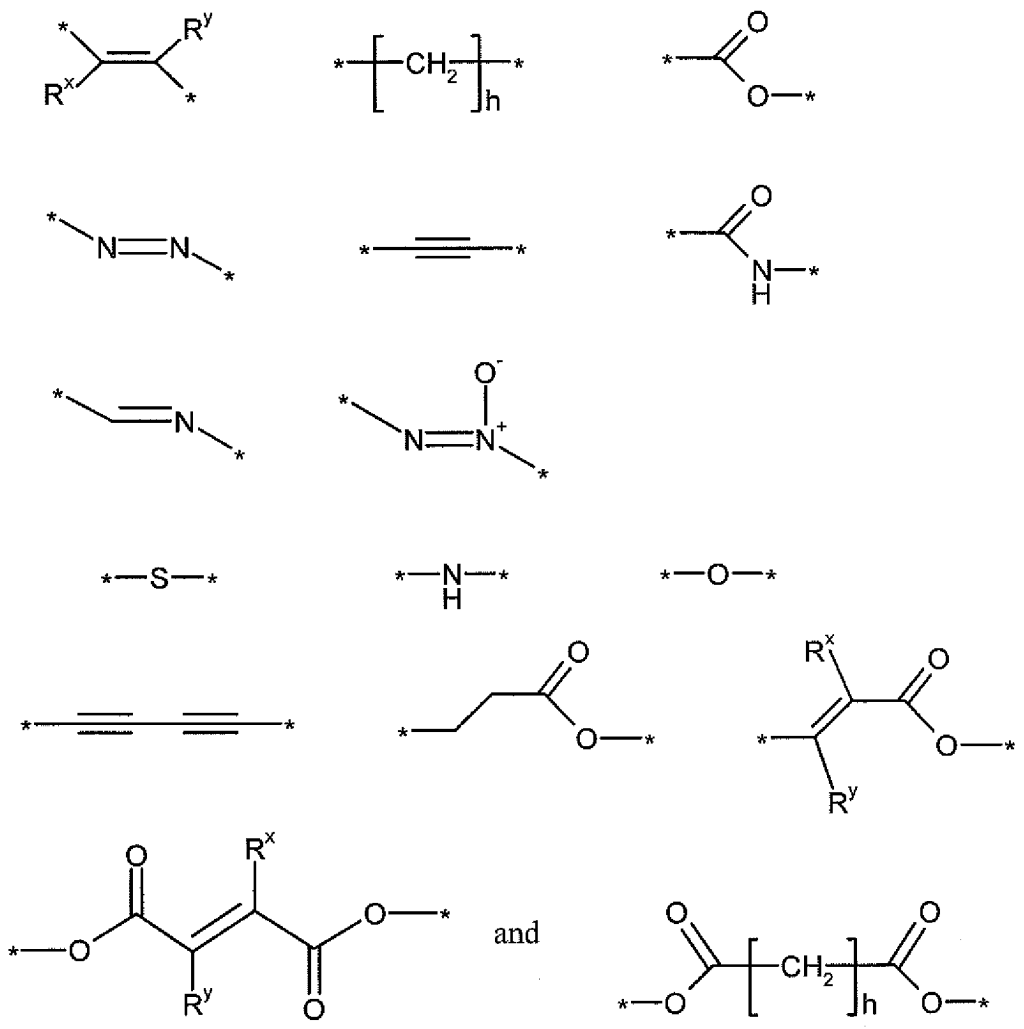
X^1, X^2 and X^3 are substituted or unsubstituted structures selected independently from the group consisting of





and

Z^1 and Z^2 are structures selected independently from the group consisting of



and

wherein

R^x and R^y are each, independently of one another, H, substituted or unsubstituted C_1-C_{22}-alkyl, C_1-C_{22}-haloalkyl, C_1-C_{22}-alkenyl, C_1-C_{22}-alkoxy, C_1-C_{22}-thioalkyl, C_1-C_{22}-iminoalkyl, C_1-C_{22}-alkoxycarbonyl, C_1-C_{22}-alkoxycarbonyloxy, a radical of an aliphatic C_1-C_{22}-alkanecarboxylic acid or of acrylic acid, halogen, pseudohalogen, NO_2, a carboxyl group or a hydroxy group,

h is an integer from 1 to 10,

w is an integer from 1 to 5,

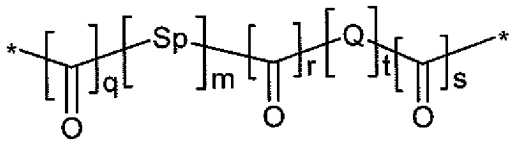
x, y and z are each, independently of one another, 0 or 1, and

n an integer from 1 to 8, where when n is 1, the group of the formula (II-a) or (II-b) bears a terminal group F' at the linkage points denoted by *,

wherein

F' is H, substituted or unsubstituted C_1-C_{22}-alkyl, C_1-C_{22}-haloalkyl, C_1-C_{22}-alkenyl, C_1-C_{22}-alkoxy, C_1-C_{22}-thioalkyl, C_1-C_{22}-iminoalkyl, C_1-C_{22}-alkoxycarbonyl, C_1-C_{22}-alkoxycarbonyloxy, a radical of an aliphatic C_1-C_{22}-alkanecarboxylic acid or of acrylic acid, halogen, pseudohalogen, a nitro (NO_2) group, a carboxyl group, a sulphonic acid group or sulphonate group or a hydroxy group,

B' is a bridging group of the formula (B)



(B)

wherein

q is 0 or 1,

r and s are identical or different and each are 0 or 1, with the proviso that when r is 1, s is 0 and vice versa or both are optionally 0,

t is 0 or 1,

Sp is a spacer selected from the group consisting of substituted and unsubstituted linear or cyclic C_1-C_{20}-alkylene groups, C_5-C_{20}-arylene groups, C_2-C_{20}-heteroarylene groups in which from one to three heteroatoms selected from the group consisting of N, O and S can additionally be present in the heteroaromatic ring or ring system, C_6-C_{20}-aralkylene groups, C_2-C_{200}-oligoether and –polyether groups,

m is 0 or 1, and

Q is O, S or NH.